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Southern Pine BEETLE NEWS

No. 24, Sept., Oct., Nov. 1980

Coordinating Council to Transfer ESPBRAP Technology is Formed

An eight-member coordinating council has been formed by State & Private Forestry (S&PF) to coordinate the transfer of technology developed since the Expanded Southern Pine Beetle Research and Applications Program (ESPBRAP) was initiated in 1975.

Objectives of the council, according to its chairman, Gerard Hertel, will be to review southern pine beetle (SPB) technology transfer efforts being coordinated through S&PF. [A SPB Technology Transfer Task Force report recently recommended that this responsibility be placed in the hands of State & Private Forestry (USDA Forest Service, Southeastern Area, Tech. Pub. SA-TP7)]. The council will also encourage the testing, packaging and/or implementation of new technology to reduce SPB-caused losses.

Hertel said potential users of the technology will benefit most if additional steps are taken to translate current knowledge into more under-

standable, readily usable information. The new council, composed of a cross-section of users, should serve an essential function in reviewing technology transfer needs and priorities, recommending areas for followup actions, and evaluating the effectiveness of the entire effort. Council members include: Steve Cade, Manager of Environmental Science, Weyerhaeuser Company, Hot Springs, Ark.; Dick Fitzgerald, Group Leader-Silviculture, Southern National Forests, Atlanta; H. J. (Boe) Green, Assistant Director, North Carolina Division of Forest Resources, Raleigh; Walt Hough, Assistant Station Director for Planning and Application, Southeastern Forest Experiment Station, Asheville, N.C.; T. J. Lentz, Staff Director, SA-S&PF, Forestation & Management, Atlanta; Jim Neal, Regional Extension Forester,

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East Texas Researchers Find SPB Activity Fluctuates With Weather

East Texas researchers have found that beetle activity fluctuates partly as a result of weather conditions but outbreaks seem to be strongly

related to stand conditions. So, promotion of stand resistance through improved management measures appears to be a viable means for reducing the impact of the southern pine beetle.

They reason that a stand hazard-rating system

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Cooperative Extension, University of Georgia, Athens; and Tom Wiseman, Assistant Editor, Forest Farmers Association, Atlanta.

Hertel noted that ESPBRAP has generated a great deal of technology that is now ready for pilot testing and transfer to users. In addition, he said information for transfer will be substantially increased as southern pine beetle studies are completed early in the Integrated Pest Management Program which began October 1.

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could be used to enable the forest manager to identify the most susceptible stands and to rank them in order of needed silvicultural treatment. Such ratings would also facilitate surveillance and planning of control activities.

To develop a rating system, the researchers first determined the variables most strongly associated with SPB infestations. They collected such stand and tree data as species, basal areas for pine and hardwood, average age, height, and diameter at breast height (dbh), radial growth for the most recent 5 years and the previous 5 years, bark thickness at the ridges and fissures, and crown class. Disturbances such as lightning, logging, ice breakage, and disease were also recorded. Sites were classified according to water regime, landform, and soil texture class. For beetle-infested plots, the number of trees killed and the area of infestation were estimated.

From the significant variables describing the baseline and infested plots, a mathematical equation was developed which classified the infestation status of an unknown plot based on the value of its discriminant score. The stepwise solution permitted the ranking of variables in order of their usefulness in differentiating between baseline and infested plots. Loblolly and shortleaf pine forest types were combined for purposes of stand rating.

The variables bark thickness in fissures, pine basal area, average tree height and landform were

found to be the most important in developing discriminant scores. Treating the plots as unknowns, 79 percent were correctly classified as infested or uninfested.

It was noted that estimates of attack probability are valid only for the range of beetle population and forest conditions studied. The actual frequency of attack depended on both host conditions and SPB population levels. For example, during 1976 the Texas Forest Service located about 11,000 beetle spots over the entire East Texas area; but in 1978 there were only 40. Obviously, changes in host resistance cannot account for such radical differences in beetle activity. Factors such as weather and biological agents must have had a significant impact.

The utility of the stand rating models will vary with land management objectives. Mature, high-hazard stands should be harvested as soon as possible to reduce sawtimber losses. Selective thinnings should be used to remove slower growing trees and maintain stand vigor in overstocked stands. It would be possible to determine the number of such trees that should be removed from the stand to achieve a specified level of attack probability.

HICKS, R. R., JR., HOWARD, J. E., WATTERSTON, K. G., AND COSTER, J. E.

1980. Rating forest stand susceptibility to southern pine beetle in east Texas. *Forest Ecol. Manage.* 2:269-283.

Master's Thesis on SPB Wins Research Society Award

A Master's thesis by David D. Reed, entitled "Estimating Region-wide Damages Caused by the Southern Pine Beetle," was one of three selected for a Master of Science Graduate Award by the Virginia Polytechnic Institute and State University Chapter of Sigma Xi at Blacksburg.

Reed's thesis involved the development of a computer simulation model for estimating region-wide timber losses due to SPB infestations. Reed has reported on his work at an annual meeting of

the Virginia Academy of Science, at the Southern Forest Insect Work Conference last year in Lexington, Ky., and at the Southern Pine Beetle Population Modeling Workshop earlier this year in Asheville, N.C. An article based on Reed's research has also been submitted to Forest Science magazine.

Reed's thesis research was part of the project "Analyzing the Southern Pine Beetle's Economic Impact for Decision Guidelines," which was funded by ESPBRAP. Drs. William A. Leuschner and Harold E. Burkhart served as project leaders.

Kentucky Division of Forestry Using New Handbook

While the southern pine beetle (SPB) is not currently a serious threat in Kentucky, the state's Division of Forestry is keeping its foresters posted on the latest SPB technology. The state is using the information provided in Agricultural Handbook No. 560, "An Aerial Observer's Guide to Recognizing and Reporting SPB Spots."

The information is being disseminated from State Forest Pest Control Specialist Richard Dorset to foresters in the four southern and eastern districts where the SPB has been a problem in the past. The foresters are relaying the information to the aerial fire detection crews who fly at least twice a year (early spring and late fall).

By knowing what to look for, the state forestry people feel they will be able to spot and stop SPB outbreaks before the insect has any real chance to get started, and before the overall problem requires a more formalized survey.

Checklist

On the adjacent column is a checklist for Southern Pine Beetle publications. Check the ones you wish to receive and mail to: Information Center U.S. Forest Service, 1720 Peachtree Rd. N.W., Room 816, Atlanta, GA 30367.

Home and Garden Bulletin

1. Southern pine beetles can kill your ornamental pines

Agriculture Handbooks

1. A field guide for ground checking southern pine beetle spots
2. An aerial observers guide for recognizing and reporting southern pine beetle spots.
3. Woodpeckers and the southern pine beetle
4. How to identify common insect associates of the southern pine beetle
5. Loran-C radio navigation systems as an aid to southern pine beetle surveys

Technology Updates — Fact Sheets

1. Use of beetle-killed timber for lumber
2. Use of beetle-killed timber for pulp, plywood and paneling
3. Setting control priorities for the southern pine beetle
4. An aerial observer's guide to recognizing and reporting southern pine beetle spots
5. Insecticides for the southern pine beetle
6. Woodpeckers can help control the southern pine beetle
7. PTAEDA: A loblolly pine growth model
8. FRONSIM, A computer program model

Symposium

1. Evaluating control tactics for the southern pine beetle

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